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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/808,321

03/25/2004

Hiroyuki Sakai

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05/16/2007

SUGHRUE MION, PLLC

2100 PENNSYLVANIA AVENUE, N.W.

SUITE 800

WASHINGTON, DC 20037

EXAMINER

LAZORCIK, JASON L

ART UNIT

PAPER NUMBER

1731

MAIL DATE

DELIVERY MODE

05/16/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/808,321

Applicant(s)

SAKAI ET AL.

Examiner

Jason L. Lazorcik

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03/23/2007, 03/25/2004 and 09/07/2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4, 9 and 13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4, 9, and 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of the species claims 4, 9, and 13 in the reply filed on March 23, 2007 is acknowledged.

Claims 1-3, 5-8, 10-12, and 14-15 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on March 23, 2007.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 4, 9, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nomura (Japanese patent Publication number JP 08-133767, Please note that for

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purposes of this Office Action any reference to Nomura '767 is made with respect to the accompanying machine translation) in view of Sawada et. al. (US 6,823,694). Nomura broadly teaches the fabrication of an optical lens element by providing highly precise control over the temperature difference between the molding surfaces.

First it is noted that although Nomura the reference points to an exemplary pressing operation utilizing a pair of upper and lower pressing molds (16, 18) (see Drawing 1) wherein the product optical lens presents first and second opposing concave surfaces, Nomura is silent regarding the preparation of a molded lens presenting the claimed opposing convex and concave surface geometries. With this in mind, the reference does explicitly teach that alternate lens pressing geometries and particularly aspheric surfaces **[Claim 13]** may be employed (¶[0050]).

Although Nomura is silent regarding the claimed molding configuration, Figures 1A to 1C presented in the analogous US Patent to Sawada et. al. (US 6,823,694) clearly teach that molded glass structures presenting one convex and one opposing concave are well known in the glass molding art. It is noted here that the Sawada reference is pointed to as an exemplary analogous teaching for a molding geometry that is well established and similarly well documented in the glass molding arts. In view of the Sawada teachings, it is therefore understood that one having no more than an ordinary level of skill in the glass molding arts would recognize the Nomura teachings as being

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fully adaptable to preparing molded lenses of geometries differing from that explicitly disclosed.

Nomura continues by teaching a method of forming a shaped optical lens by pressing between a pair of upper and lower pressing molds while the glass material is present in a "heat-softened state". Regarding the details of the process as presently claimed, Nomura instructs that a glass material heated to an elevated temperature is fed to onto the surface of the lower punch member which has likewise been heated to a predetermined process temperature (¶[0036]). As a principle motivation for the disclosed method and apparatus, Nomura indicates (see ¶[0009 - 0021]) that for glass lenses "with the large difference of main thickness and circumference thickness...It is difficult to take out profile irregularity." Further, the reference teaches that in order to "take out" or remove this profile irregularity "(tight) control of the temperature gradient between the molds of the pair (of molds during) time of cooling" must be addressed.

Nomura recognized that the cross-sectional profile of a pressed glass lens is directly influenced by the temperature gradient between the upper and lower press molds during the pressing operation. Specifically, the reference discloses that "(one) can grasp now the relation between a temperature gradient and a shaping result easily..but can perform a setup of a suitable temperature gradient now easily" (¶ [0023-0024]) .

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Nomura further discloses that once the temperature gradient is known, a operator of the pressing apparatus may adjust the cooling parameters to correct or stabilize the irregular profile [Claim 9]. To this end, Nomura teaches that “it is easy to generate a peculiarity, when controlling the temperature gradient between the molds of a pair, and it is necessary to acquire the profile irregularity stabilized according to the process condition in shaping of the optical element of a concave lens configuration from which profile irregularity changes a lot, for this reason it controls the temperature gradient between the molds of a pair” (§[0017])

Finally, Nomura teaches that in addition to maintaining a constant thermal gradient during the cooling process, the disclosed apparatus may provide dynamic control over the temperature gradient during the cooling operation (e.g. increase or decrease the cooling rate) in order to “stabilize” any profile irregularity in the molded lens. Here the reference indicates that “in case the temperature gradient between the molds of a pair is controlled...in case temperature-gradient control between the molds ...is performed, it can set up so that the temperature gradient may change” (§[0020])

Nomura is silent regarding the particular details of the control over the cooling rates of the upper and lower forming members. Specifically, the reference doesn't explicitly teach adjusting the cooling rate of the upper or lower mold surfaces in response to an aberration in the radius of curvature of the central or peripheral lens profile in the level of detail as presently claimed. Nomura does however recognize the “relation between a

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temperature gradient and a shaping result" of a glass lens and that a profile irregularity may be "stabilized" by adjusting the "temperature gradient between the molds of a pair". Nomura further clearly recognized that a profile irregularity may be corrected specifically by changing the temperature gradient between the pair during the cooling operation.

"[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation."; see *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation (See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) and *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977)). In the instant case, Nomura recognized a changing temperature gradient between a mold pair during the cooling cycle of a press operation directly impacts the nature of profile irregularities in the pressed lens. Therefore the dynamic mold pair temperature gradient (e.g. upper and lower mold cooling rates) is deemed a result-effective variable of glass lens molding operation. Since optimization of this result effective variable would be undertaken through routine experimentation, the instant claim wherein cooling rates are adjusted in response to an observed profile irregularity is obvious over the prior art.

Conclusion

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason L. Lazorcik whose telephone number is (571) 272-2217. The examiner can normally be reached on Monday through Friday 8:30 am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JLL


STEVEN P. GRIFFIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700